

# RESULTS OF TRENDS RESEARCH DEVELOPMENT

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## **Abstract:**

Within the framework of determined basic objective was more specific focus on the field of management, ownership structure, financial control, logistics and manufacturing control, marketing, education and risk management. In defining of the individual objectives, stress was put to factual status and potential benefit. Therefore, from wide quantity of possible evaluated subjects is the attention paid mainly to business companies of joint-stock type and limited liability type. These usually represent larger business scope in comparison to companies with personal participation and trade. Considering the fact that business is influenced by local conditions and specific possibilities of their formation, the analysis was related to companies operating in South Moravia region.

Such defined targets established pre-requisite for acquisition of rather large quantity of unique data, for extensive publication activity and first-rate scientific development of participating employees and whole investigation team as such. In this relation we can mention as important outputs the preparation of dissertation thesis.

In the course of the research the areas to be solved were gradually made more specific with respect to our capacity and knowledge possibilities, and - above all - with respect to continuously reached results, which showed the need to solve certain specific questions. Taking into account these facts, solved areas are delimited as following:

- top management
- marketing
- environmental management
- crisis management
- logistics
- finance

# **RESULTS OF TRENDS RESEARCH DEVELOPMENT**

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## **1 Objectives of research and strategy of their accomplishment**

On the basis of the elaboration of the analysis of contemporary status, the objective of the task is to outline possible trends of the development of mechanical engineering and electrical engineering companies. Focus on trade companies of the type joint-stock company and limited liability company operating in the South Moravia region. The objective is to outline possible future behavior of especially owners and management with the output to the operation itself, expected requirements to conditions from the side of cities and towns and, moreover, requirements to profile and structure of university graduates. The point is to arrange competitiveness and long-term prosperity. The important part is represented by the preparation to the activity within the framework of EU and formation of Euro-regions.

## **Objectives of research in year 2004 and anticipated results**

The main objective of further solution to research plan was to expand the matrix of so far solved fields with the question of the innovation potential, E-business and ISO certification. These areas are considered - with respect to findings in previous parts of the research - as important not only from the point of the strengthening of competitiveness of companies as such, but also (mainly in the first two cases) as so far underdeveloped from the point of theory and practice of mechanical and electrical engineering companies, resp. economical- managerial disciplines at all. Anticipated results can be characterized in general as development and evaluation of methods coming out from given fields and development of both theoretical and practical base of knowledge of economic studies. In our view, it is possible to draw up such procedures, which in a factual way can solve the particular issue. From the point of theory development they are touched with outputs from both theoretical and practical

bases of knowledge of economic sciences, with further strengthening of publication activities as well as development of scientific- research and pedagogic base.

### **Detail characteristics of research objectives and method of their accomplishment**

Within the framework of determined basic objective was more specific focus on the field of management, ownership structure, financial control, logistics and manufacturing control, marketing, education and risk management. In defining of the individual objectives, stress was put to factual status and potential benefit. Therefore, from wide quantity of possible evaluated subjects is the attention paid mainly to business companies of joint-stock type and limited liability type. These usually represent larger business scope in comparison to companies with personal participation and trade. Considering the fact that business is influenced by local conditions and specific possibilities of their formation, the analysis was related to companies operating in South Moravia region.

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### **Brief overall characteristics of achieved results of research, contribution of solution to research**

In the theoretical-science field can be achieved results in a summary characterized from several points of view. Firstly, science-research base of the faculty resp. whole BUT was strengthened, both from technical and personnel point of view. Among others, by this fact was enabled intense development of international science-research and pedagogical co-operation. Publication activity not only in national, but also international scope was increased accordingly. Moreover, Ph.D. study was improved as well, while inspiring elaboration of a series of dissertation theses, many of them already successfully defended.

Factual outputs of the individual parts of the team aimed at the development of theoretical base of knowledge in research fields as well as development and evaluation of methods applicable in the area of economy and management of companies. By that was fulfilled the requirement regarding the co-operation with the company sphere not only in the stage of research, but also in the moment of the development of new methods and search for the procedures of their application. Complex base for further development and research was established, stressing the dynamics of contemporary business environment together with the need of multi-discipline development of economic disciplines in the broad context of further scientific fields.

Demonstrable exactness of achieved results, acceptable predictable ability given by the number of respondents prove the credibility of task fulfillment and justification of the overall concept of the assessment. Applied co-operation with the industrial sphere represents the contribution beneficial to both parties, increases the trust in good preparation of graduates on the basis of factual focus of the research and subsequent development of pedagogical activity. Presentation of results in the science conferences and their feedback represent the form of the acknowledgement by the scientific community. Especially are appreciated focus, scope and depth of implemented research and its evaluation.

There are established contacts with research teams both at home and abroad, and these contacts are still being broadened, there is an effort for the establishment of joint projects. International co-operation was within the framework of concluded contracts in the faculty level. Co-operation is especially with Nottingham Trent University in the Great Britain, University Whitewater Wisconsin in the USA, University of M. Copernicus in Torun in Poland, University Mainz. International co-operation was implemented also with Material Handling Industry of America in the form of annual five-day stays in the Czech Republic with the scientific lectures.

International co-operation aimed in such a way so as to be able to evaluate influences in the individual countries has been initiated:

- contract of co-operation in the area of research and pedagogy was concluded with Kaunas Faculty of Humanities from Vilnius University.
- contract of co-operation in the faculty level was concluded with Yaroslav The Wise Novgorod State University, further co-operation with the University of M. Copernicus in Torun and University in Zagreb.
- within the framework of study stay of Ph.D. student (ing. Pavla Břečková) was elaborated the study of British enterprises with the aim to prepare at least partial comparison of trends and expectations of these enterprises and enterprises in the Czech Republic.

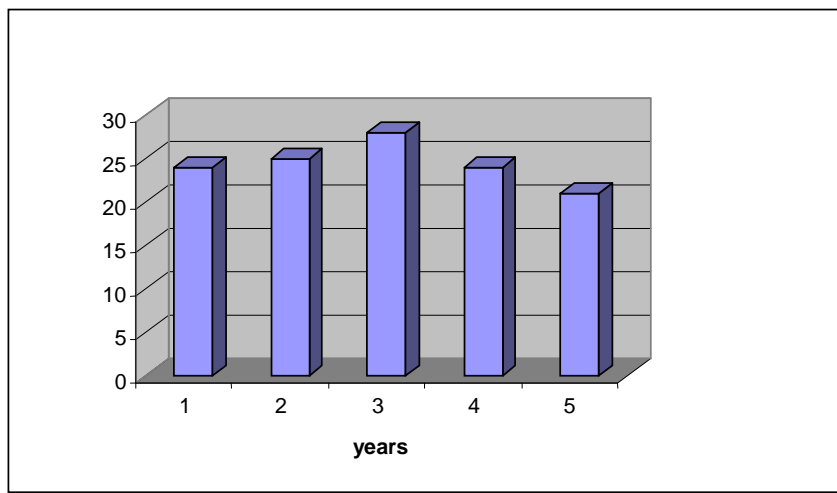
Important fact - in the light of future development - is also the fact that the research premises were equipped with adequate IT and office technologies. People participating in the project can communicate via E-mail, Internet. Moreover, laboratory for further assessment of achieved results, their presentation and for the training of new calculation methods and programs was established.

### **Results from the point of VUT**

Team is managed by distinctive scientific person that continuously expands the radius of assistants, team capacity is sufficient with respect to assumed development, team stability is sufficient and there is a hope in its improvement.

This year we are terminating the research plan, upon which the faculty members have been working since 1999. In year 2000 participated 24 members, in year 2001 – 25 members, in year 2002 – 28 members, in year 2003 24 members and this year 2004 - 21 members, see Graph no. 1. During the whole period of solution participated in the elaboration of research plan 18 members, out of them 3 professors and 4 associate professors.

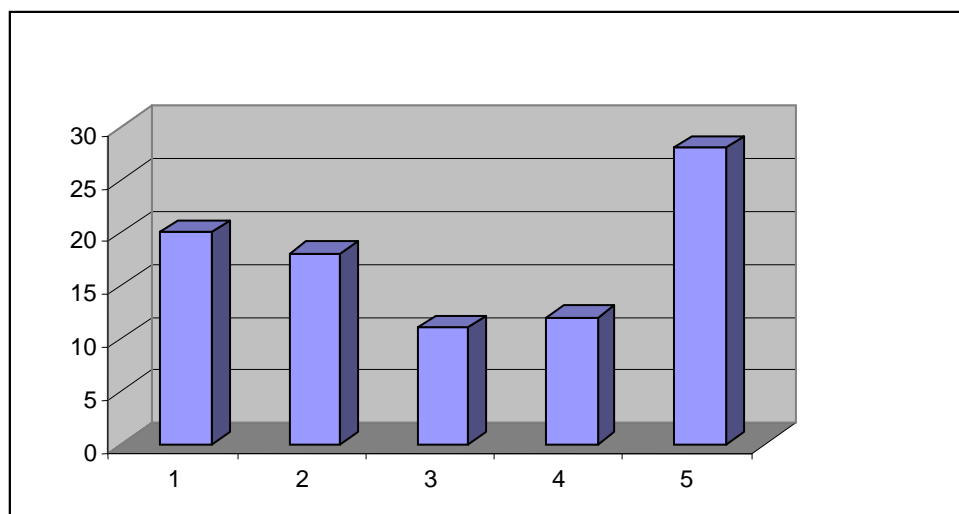
**Graph no.1: Number of people co-operating in research in years 1999-2004**



*number of people vs. years*

Philosophy of the research guarantees considerable opportunity for the professional growth also to people standing on the beginning of their academic career and Ph.D. students. Consequently, the research represented the opportunity for development and broadening of the scientific base of the faculty. Ph.D. students (totally 70) participated in the research. Graf no. 2 specifies Ph.D. students co-operating in the research between the years 2000 – 2004.

**Graph no. 2: Number of Ph.D. students participating in the research in years  
2000 - 2004**



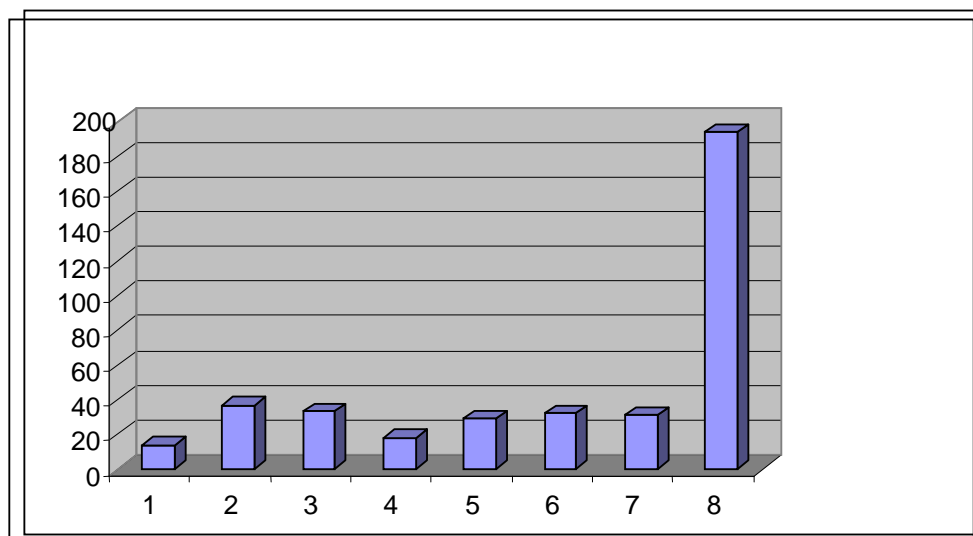
	20	<b>2002</b>	11	<b>2004</b>	28
<b>2001</b>	21	<b>2003</b>	12		

**Table 1: Overall survey of Ph.D. study in years 1998 - 2004**

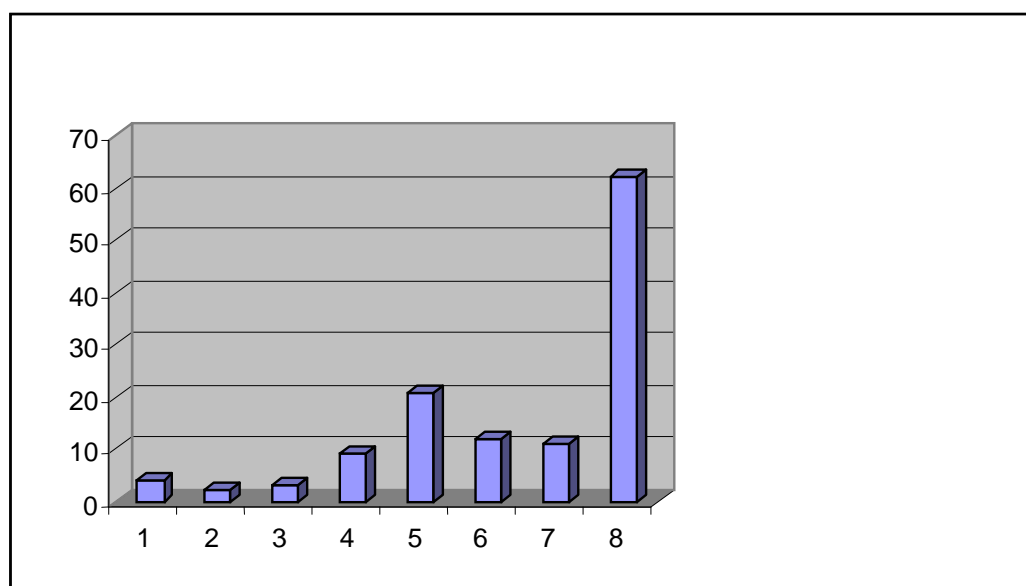
year	no. of incoming Ph.D. students	defended dissertation thesis
1998/99	14	4
1999/00	37	2
2000/01	33	3
2001/02	18	9
2002/03	29	21
2003/04	32	12
2004/05	31	11
<b>Total</b>	<b>194</b>	<b>62</b>



**Graph no. 3: Number of incoming Ph.D. students in years 1998 - 2004 and total**



**Graph no. 4: Number of accepted dissertation thesis in years 1998 - 2004 and total**



During the running of the research also applied for ***the start of habilitation procedure*** acc. to provisions of §72 law no. 111/1998 Coll., of universities, and submitted habilitation thesis following researchers:

- Ing. Mária Režňáková, CSc. - title "Strategic financial management of the company in the Czech Republic".

- Ing. Alena Kocmanová, Ph.D. - title “Strategic environmental management of costs of the company“.

## 2 The Most Important Results of Research

### Results achieved solely by the solution to the research

Regularly, since 2000, was held annual **presentation conference** with the title “New trends of development of the industry“. Its aim was to introduce professional public to accomplished results of the research. Since 2001 this conference has been organized as international. Besides experts from the Czech Republic, scientific and research representative from Slovakia, Slovenia, Croatia, Poland, Lithuania and Great Britain participated. At the same time, these conferences contributed to the possibility of exchanging of points of view and verification of achieved recognition and recommendation. Valuable was the attendance of representatives of companies and the possibility of the introduction to their standpoints and reactions to specified recommendations. Symposium textbook was published on the occasion of each conference, and contained texts can be also viewed as one of the outputs of research plan.

Researchers - besides publication activity connected with the conference and professional press - published **three books**, out of which the book with the title “Possible Trends of Development of The Company” represent summary output of the research in the concentrated form, where are included the individual solved areas:

- NĚMEČEK, P. a kol. *Možné trendy rozvoje podniků*.1.vyd. Brno: Akademické nakladatelství CERM, 2004. 148 s.. ISBN 80-7204-362-5
- KOČMANOVÁ, A. *Účetnictví - podvojně účetnictví v aplikaci a příkladech*.1.vyd. Brno: Akademické nakladatelství CERM, 2002. 210 s.. ISBN 80-2142348-X
- RAIS,K., SMEJKAL,V. *Řízení rizik*. 1.vyd. Praha: Grada , 2003. 270 s. ISBN 80-247-0198-7

**Series of recommendations and subject matters for the industrial field** were applied. Nevertheless, it is not verified what application result was achieved. It is necessary to state that the willingness to publish achieved company results above the scope of legal frame of publishing is not too high.

Furthermore, research team had also the chance to be engaged in the elaboration of the ***Strategy of Development of South-Moravia Region*** and thus to apply recommendations which were achieved within the framework of research plan. Regional Office is responsible for the application of this strategy.

The result, which must not be omitted, is also ***widening of own knowledge*** and improvement of the intellectual level of those involved, and mainly their perspective successors. Decisive part of faculty Ph.D. students participated in the research, many of them successfully finished their studies during the duration of a.m. project.

Remarkable result is extensive ***publication activity*** of all involved members. Below mentioned summary mentions the most important publications of the individual members.

### **Comprehensive specification of achieved knowledge**

In the period of the accession into EU is the priority knowledge and respecting of conditions, which act in this community. These conditions are valid not only for state authorities, but also - and maybe mainly - for the management of company sector, which - besides their respecting - must also implement them. Therefore, it is obvious that trends of the development of management and factual tasks require - above all - to keep touch with the reality, consistent concentration on people and their growth, continuous pressure upon increasing of productivity form the framework of the success in the conditions of protracted growth. The challenge is to implement these rules quickly, prior the others shall recover. Then, it is possible to draw away in front of the competitors.

Mergers and acquisitions were in the EU on the top in the year 2000, with total number of 16750 operations. Since that time we can see a drop. Having in mind the number of securities it is possible that the activity aimed at the fusion and acquisition shall be increased again in the future.

In year 1990 the globalization just only started to come to the existence as the political theme. Nowadays, the globalization is considered as one of the key factors

of the change in the contemporary economic systems and societies. Most of the world, including China and Russia, today participate in the international market economy. New markets are opened for products and services. At the same time, it increases competition from the export, and can result in the relocation of manufacturing activities into the countries with lower factor of costs. As - based on obvious reasons -we can not compete only in the field of costs themselves, the main role is played by knowledge, which helps the industry to face the pressure of globalization, in all sectors, with high level of the technology or without it. In this context is principal the support of the innovation and maintenance, preparation of highly experienced human capital, if we are to maintain within our borders the activities with high added value and based on knowing. In the global economics - as a paradox - remain the locality the main factor of the research and innovation.

Globalization is accompanied and strengthened by technological changes, mainly in information and communication technologies, which are the universal technologies. They can help to increase the productivity in all industrial areas and they can influence design, manufacturing, distribution and marketing of majority of products and services. Furthermore, they make easier also new forms of the organization such as f.e. ordering of services from external sources, as well se strong internal relation between industry and services described in above presented analysis, support voluntary tools related to life environment including environmental systems of management.

### **Pillars of sustainable development**

As fundamental and economic objective is set competitiveness, understood as the ability of the economy to provide its citizens high and growing standard of living and high rate of employment in sustainable level. As the decision point is taken the ability of development of processing industry. Dynamics of industry, however, is principal for maintaining and increasing of the prosperity and satisfaction of social, environmental and international ambitions.

Sustainability has three main pillars:  
economic,  
social and  
environmental.

Advancement leading to the fulfillment of sustainable development assumes that the progress shall be balanced with respect to all these pillars. Marginalization of one pillar would result only to the fact that the overall objective would not be fulfilled. Therefore, competition is inseparable part of successful strategy of sustainability. Three key factors of industrial competition should be taken into consideration:

Knowledge,  
innovation and  
entrepreneurship

Catchment of new trends means that our country and its economy need to be in the first row to the way to new knowledge. It is necessary to be more and more involved in education, professional training and to give such knowledge at disposal to industrial field.